

## Supplemental Appendix

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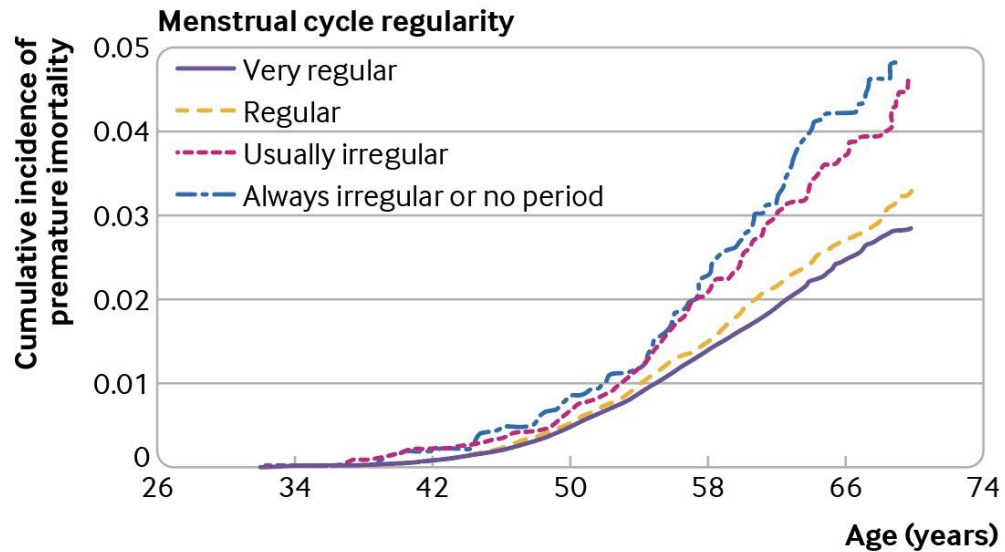
Supplemental table 1. Age-standardized characteristics of included women versus those excluded due to missing exposure information at baseline in 1993 (The Nurses' Health Study II, 1993-2017).

Characteristics	Included <sup>†</sup> (n=79 505)	Excluded <sup>‡</sup> (n=27 662)
Age, y <sup>*</sup>	37.7 (4.6)	38.7 (4.7)
White, %	95.6	91.4
Current smoker, %	10.4	11.1
BMI, kg/m <sup>2</sup>	25.2 (5.6)	25.3 (5.7)
Physical activity, hour/week	2.7 (3.8)	2.9 (4.6)
Hypertension, %	7.0	8.4
High blood cholesterol, %	16.7	16.5
Family history of diabetes, %	16.3	17.2
Alcohol consumption, g/d	3.5 (6.7)	3.5 (6.7)
Total Calories, kcal	1820 (550)	1800 (570)
AHEI score	44.7 (10.1)	44.7 (10.0)
Parity	1.7 (1.2)	1.6 (1.2)
Hirsutism, %	2.6	1.9
Endometriosis, %	4.6	4.1
Uterine fibroids, %	8.1	9.9

Values are means (SD) for continuous variables and percentages for categorical variables and are standardized to the age distribution of the study population. <sup>\*</sup>Value is not age-adjusted. <sup>†</sup>Women with complete menstrual cycle characteristics at ages of 14-17, 18-22, and 26-49 years who were included in our analysis. <sup>‡</sup>Women who were excluded from the analysis because of missing data on menstrual cycle characteristics (303 and 24 583 women had missing data on cycle length at ages of 18-22 and 29-46 years, respectively; 862, 3166, and 21 358 women had missing data on cycle regularity at ages of 14-17, 18-22, and 29-46 years, respectively).

**Supplemental table 2. Categories for causes of death.**

<b>Causes of death</b>	<b>ICD-8 code</b>	<b>Case numbers (total n=1975)</b>
<b>Cancer</b>	<b>140-207</b>	<b>894</b>
Malignant neoplasm of buccal cavity and pharynx	140-149	6
Malignant neoplasm of digestive organs and peritoneum	150-159	165
Malignant neoplasm of respiratory system	160-163	116
Malignant neoplasm of bone, connective tissue, and skin	170-173	33
Malignant neoplasm of breast	174	256
Malignant neoplasm of genito-urinary organs	180-189	146
Malignant neoplasm of other and unspecified sites	190-199	92
Neoplasms of lymphatic and haematopoietic tissue	200-207	80
<b>Cardiovascular disease</b>	<b>390-458</b>	<b>172</b>
Chronic rheumatic heart disease	393-398	2
Hypertensive disease	400-404	1
Ischaemic heart disease	410-414	68
Other forms of heart disease	420-429	34
Cerebrovascular disease	430-438	38
Diseases of arteries, arterioles and capillaries	440-448	14
Diseases of veins and lymphatics, and other diseases of circulatory system	450-458	15
<b>Other causes</b>	<b>390-458</b>	<b>909</b>
Benign neoplasm	208-239	7
Infectious and parasitic diseases	000-136	42
Mental disorders	290-315	24
Respiratory disease	460-519	43
Endocrine, nutritional and metabolic diseases or immunity disorders	240-279	38
Diseases of blood and blood-forming organs	280-289	7
Diseases of the nervous system and sense organs	320-389	42
External causes (e.g., accidents, injury, and poisoning)	800-950, 959-999	149
Suicide	950-959	68
Diseases of gastro-intestinal system	520-577	41
Diseases of genito-urinary system	580-629	10
Complications of pregnancy, childbirth, and the puerperium	630-676, 760-779	3
Symptoms referable to systems or organs	780-789	2
Senility and ill-defined diseases	790-794, 796	96
Sudden death	795	11
Diseases of the musculoskeletal system and connective tissue	710-738	18
Congenital anomalies	740-759	6
Unknown	Missing	302



**No at risk**

Very regular

43 692    43 659    43 491    38 601    14 740

Regular

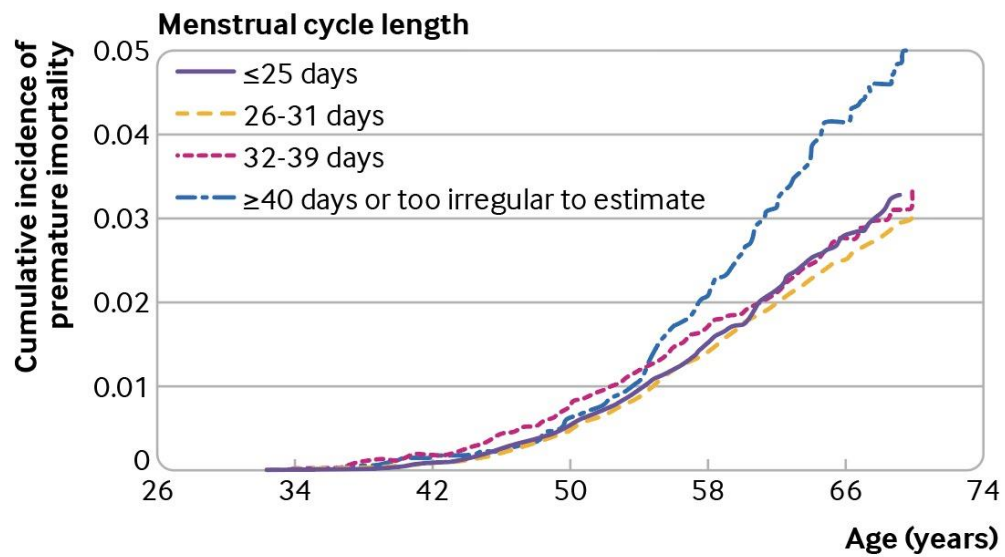
18 787    18 774    18 685    16 509    6871

Usually irregular

4570    4560    4542    3902    1799

Always irregular or no period

2685    2680    2662    2209    870



**No at risk**

≤25 days

11 743    11 730    11 681    10 883    5337

26-31 days

46 966    46 936    46 750    41 285    15 994

32-39 days

7521    7503    7467    6177    1724

≥40 days or too irregular to estimate

3504    3499    3482    2876    1225

**Supplemental fig 1. Crude cumulative incidence of premature mortality (before age 70 y) according to menstrual cycle regularity and length at ages 29-46 years.**

**Supplemental table 3.** Adjusted hazard ratios (HRs) and 95% confidence intervals (CI) for premature mortality according to joint categories of menstrual cycle regularity and length at ages of 18-22 and 29-46 years (The Nurses' Health Study II, 1993-2017).

Cycle regularity	Cycle length	Deaths/PY	HRs (95% CI)	
			Multivariable adjusted*	Further adjustment for lifestyle factors <sup>†</sup>
18-22y				
Oral contraceptive users	OC users	1222/1 150 886	1.12 (1.01 to 1.25)	1.06 (0.95 to 1.18)
Very regular or regular	<32d	479/48 4491	1.00 (reference)	1.00 (reference)
	≥32d	57/65 631	0.99 (0.75 to 1.30)	0.99 (0.75 to 1.30)
Irregular or no cycles	<32d	69/51 173	1.34 (1.04 to 1.73)	1.32 (1.03 to 1.70)
	≥32d	148/127 589	1.26 (1.05 to 1.52)	1.25 (1.04 to 1.51)
p for multiplicative interaction			0.87	0.93
RERI (95% CI)			-0.05 (-0.52 to 0.42)	-0.03 (-0.49 to 0.43)
p for additive interaction			0.84	0.90
29-46y				
Oral contraceptive users	OC users	167/230 177	0.87 (0.74 to 1.03)	0.92 (0.78 to 1.09)
Very regular or regular	<32d	1396/1 334 360	1.00 (reference)	1.00 (reference)
	≥32d	134/144 411	1.06 (0.89 to 1.27)	1.08 (0.90 to 1.29)
Irregular or no cycles	<32d	87/54 685	1.24 (1.00 to 1.55)	1.17 (0.94 to 1.45)
	≥32d	191/116 137	1.51 (1.30 to 1.76)	1.45 (1.25 to 1.70)
p for multiplicative interaction			0.39	0.36
RERI (95% CI)			0.21 (-0.18 to 0.59)	0.21 (-0.16 to 0.58)
p for additive interaction			0.29	0.27

PY: person-year. \*Multivariable models were adjusted for age (continuous), menopausal status (premenopausal, never, past, or current menopausal hormone use), age at menarche (≤10, 11, 12, 13, or ≥14 years), race (White or other), family history of MI, stroke or diabetes (yes or no), baseline hypertension or high blood cholesterol (yes or no), and updated parity (0, 1, or ≥2). †Multivariable models were further adjusted for updated alcohol drinking (0, 0.1-4.9, 5.0-9.9, 10.0-14.9, 15.0-29.9, or ≥30 g/day), BMI (<23, 23-24.9, 25-29.9, 30-34.9, or ≥35), physical activity (0, 0.1-0.9, 1.0-3.4, 3.5-5.9, or ≥6 hours/week), smoking consumption (never smoker, former smoker, current smoker: 1-14, 15-24, or ≥25 cigarettes/day), and Alternative Healthy Eating Index 2010 score (quintiles).

**Supplemental table 4.** Adjusted hazard ratios (HR) and 95% confidence intervals (CI) for cause-specific premature mortality according to menstrual cycle length at age of 18-22 and 29-46 years among 79 505 premenopausal women (The Nurses' Health Study II, 1993-2017).\*

Menstrual cycle length (days)	Cancer death		CVD death		Deaths due to other causes	
	Deaths/PY	HR (95% CI)	Deaths/person-year	HR (95% CI)	Deaths/person-year	HR (95% CI)
<b>18-22y</b>						
Oral contraceptive users	546/1 151 478	1.05 (0.90 to 1.24)	108/1 151 900	1.06 (0.73 to 1.54)	568/1,151,511	1.01 (0.86 to 1.18)
≤25d	40/64 145	1.30 (0.93 to 1.83)	6/64 182	1.01 (0.43 to 2.40)	26/64,166	0.79 (0.53 to 1.18)
26-31d	211/471 766	1.00 (reference)	40/471 922	1.00 (reference)	225/471,775	1.00 (reference)
≥32d or too irregular to estimate	97/193 313	1.23 (0.97 to 1.57)	18/193 383	1.16 (0.67 to 2.04)	90/193,320	1.04 (0.81 to 1.32)
P for trend <sup>†</sup>		0.73		0.54		0.29
<b>In 1993 (29-46 y)</b>						
Oral contraceptive users	64/230 269	0.79 (0.60 to 1.03)	8/230 318	0.56 (0.27 to 1.18)	95/230,241	1.09 (0.87 to 1.37)
≤25d	154/277 534	0.96 (0.80 to 1.15)	31/277 652	1.04 (0.69 to 1.56)	155/277,553	1.01 (0.84 to 1.21)
26-31d	532/1 112 194	1.00 (reference)	97/1 112 596	1.00 (reference)	514/1,112,250	1.00 (reference)
≥32d or too irregular to estimate	144/260 705	1.27 (1.05 to 1.53)	36/260 821	1.46 (0.99 to 2.16)	145/260,727	1.21 (1.00 to 1.45)
P for trend <sup>†</sup>		0.02		0.15		0.18

PY: person-year. \*Multivariable models were adjusted for age (continuous), menopausal status (premenopausal, never, past, or current menopausal hormone use), age at menarche (≤10, 11, 12, 13, or ≥14 years), age at menarche (≤10, 11, 12, 13, or ≥14 years), race (White or other), family history of MI, stroke or diabetes (yes or no), baseline hypertension or high blood cholesterol (yes or no), as well as updated parity (0, 1, or ≥2), alcohol consumption (0, 0.1-4.9, 5.0-9.9, 10.0-14.9, 15.0-29.9, or ≥30 g/day), BMI (<23, 23-24.9, 25-29.9, 30-34.9, or ≥35), physical activity (0, 0.1-0.9, 1.0-3.4, 3.5-5.9, or ≥6 hours/week), smoking status (never smoker, former smoker, current smoker: 1-14, 15-24, or ≥25 cigarettes/day), and Alternative Healthy Eating Index 2010 score (quintiles). <sup>†</sup>P-values for trend were calculated across the categories of menstrual cycle length, excluding women who were oral contraceptive users.

**Supplemental table 5.** Adjusted hazard ratios (HR) and 95% confidence intervals (CI) for mortality due to less common reasons according to menstrual cycle regularity and length at age of 29-46 years among 79 505 premenopausal women (The Nurses' Health Study II, 1993-2017).\*

Menstrual cycle regularity or length at age of 29-46y	Malignant neoplasm of digestive organs and peritoneum		Malignant neoplasm of respiratory system		Malignant neoplasm of breast		Malignant neoplasm of genito-urinary organs		External causes (e.g., accidents, injury, and poisoning)	
	Deaths	HR (95% CI)	Deaths	HR (95% CI)	Deaths	HR (95% CI)	Deaths	HR (95% CI)	Deaths	HR (95% CI)
<b>Cycle regularity</b>										
Oral contraceptive users	11	0.77 (0.40 to 1.46)	7	0.65 (0.29 to 1.45)	25	1.06 (0.68 to 1.65)	7	0.50 (0.23 to 1.11)	21	1.57 (0.93 to 2.63)
Very regular	86	1.00 (reference)	70	1.00 (reference)	145	1.00 (reference)	83	1.00 (reference)	62	1.00 (reference)
Regular	44	1.15 (0.80 to 1.65)	25	0.79 (0.50 to 1.26)	54	0.87 (0.64 to 1.19)	35	0.92 (0.62 to 1.37)	45	1.63 (1.11 to 2.40)
Irregular/no period	24	1.53 (0.96 to 2.42)	14	1.08 (0.60 to 1.93)	32	1.35 (0.92 to 2.00)	21	1.24 (0.76 to 2.03)	21	1.71 (1.03 to 2.84)
P for trend <sup>†</sup>		0.08		0.79		0.43		0.60		0.01
<b>Cycle length</b>										
Oral contraceptive users	11	0.70 (0.37 to 1.32)	7	0.74 (0.33 to 1.67)	25	1.09 (0.70 to 1.69)	7	0.53 (0.24 to 1.17)	21	1.31 (0.79 to 2.18)
≤25d	17	0.54 (0.32 to 0.90)	26	1.25 (0.79 to 1.98)	41	0.92 (0.65 to 1.31)	34	1.30 (0.87 to 1.94)	26	1.18 (0.75 to 1.84)
26-31d	104	1.00 (reference)	65	1.00 (reference)	151	1.00 (reference)	85	1.00 (reference)	80	1.00 (reference)
≥32d or too irregular to estimate	33	1.47 (0.99 to 2.18)	18	1.34 (0.79 to 1.28)	39	1.26 (0.88 to 1.80)	20	1.07 (0.65 to 1.75)	22	1.13 (0.70 to 1.82)
P for trend <sup>†</sup>		<0.001		0.95		0.17		0.37		0.81

\*Multivariable models were adjusted for age (continuous), menopausal status (premenopausal, never, past, or current menopausal hormone use), age at menarche (≤10, 11, 12, 13, or ≥14 years), age at menarche (≤10, 11, 12, 13, or ≥14 years), race (White or other), family history of MI, stroke or diabetes (yes or no), baseline hypertension or high blood cholesterol (yes or no), as well as updated parity (0, 1, or ≥2), alcohol consumption (0, 0.1-4.9, 5.0-9.9, 10.0-14.9, 15.0-29.9, or ≥30 g/day), BMI (<23, 23-24.9, 25-29.9, 30-34.9, or ≥35), physical activity (0, 0.1-0.9, 1.0-3.4, 3.5-5.9, or ≥6 hours/week), smoking status (never smoker, former smoker, current smoker: 1-14, 15-24, or ≥25 cigarettes/day), and Alternative Healthy Eating Index 2010 score (quintiles). <sup>†</sup>P-values for trend were calculated across the categories of menstrual cycle regularity or length, excluding women who were oral contraceptive users.



**Supplemental table 6.** Sensitivity analyses for the association of menstrual cycle regularity and length with the risk of premature mortality, in which women aged >40 years in 1993 or received a diagnosis of type 2 diabetes during follow-up were excluded, or premature mortality was redefined as death before age 65 years, or baseline values of all covariates were used in the analysis (The Nurses' Health Study II, 1993-2017).\*

Menstrual cycle regularity or length	Excluding women aged >40 years in 1993 from the analysis		Excluding women who developed type 2 diabetes during follow-up from the analysis		Premature death before age 65 y		Using only baseline values of all covariates in multivariable models	
	Deaths	HR (95% CI)	Deaths	HR (95% CI)	Deaths	HR (95% CI)	Deaths	HR (95% CI)
<b>Cycle regularity</b>								
<b>14-17y</b>								
Oral contraceptive users	150	1.24 (1.02 to 1.51)	180	1.21 (1.02 to 1.43)	293	1.14 (1.00 to 1.30)	190	1.16 (0.98 to 1.36)
Very regular	327	1.00 (reference)	624	1.00 (reference)	981	1.00 (reference)	674	1.00 (reference)
Regular	280	0.96 (0.82 to 1.13)	529	0.97 (0.86 to 1.09)	833	0.95 (0.87 to 1.04)	560	0.95 (0.85 to 1.07)
Usually irregular	153	1.14 (0.94 to 1.38)	263	1.09 (0.94 to 1.26)	399	1.04 (0.92 to 1.16)	287	1.09 (0.95 to 1.26)
Always irregular or no period	145	1.31 (1.08 to 1.60)	239	1.18 (1.02 to 1.38)	364	1.10 (0.98 to 1.25)	264	1.16 (1.01 to 1.34)
P for trend <sup>†</sup>		0.008		0.03		0.11		0.03
<b>18-22y</b>								
Oral contraceptive users	648	1.10 (0.92 to 1.31)	1127	1.02 (0.89 to 1.16)	1762	1.05 (0.94 to 1.17)	1222	1.00 (0.88 to 1.14)
Very regular	158	1.00 (reference)	289	1.00 (reference)	418	1.00 (reference)	304	1.00 (reference)
Regular	124	1.00 (0.79 to 1.27)	218	0.97 (0.81 to 1.16)	339	0.99 (0.86 to 1.15)	232	0.96 (0.81 to 1.13)
Usually irregular	70	1.24 (0.93 to 1.64)	112	1.18 (0.95 to 1.47)	158	1.11 (0.92 to 1.33)	119	1.14 (0.92 to 1.41)
Always irregular or no period	55	1.44 (1.06 to 1.96)	89	1.36 (1.07 to 1.73)	129	1.28 (1.05 to 1.56)	98	1.32 (1.05 to 1.66)
P for trend <sup>†</sup>		0.01		0.009		0.01		0.02
<b>29-46y</b>								
Oral contraceptive users	129	1.00 (0.82 to 1.22)	158	0.93 (0.78 to 1.10)	178	0.93 (0.79 to 1.10)	167	0.97 (0.82 to 1.15)
Very regular	540	1.00 (reference)	971	1.00 (reference)	1081	1.00 (reference)	1038	1.00 (reference)
Regular	247	1.12 (0.96 to 1.30)	462	1.07 (0.96 to 1.19)	508	1.04 (0.93 to 1.15)	492	1.06 (0.95 to 1.18)
Usually irregular	88	1.63 (1.30 to 2.04)	158	1.37 (1.16 to 1.62)	179	1.33 (1.13 to 1.55)	172	1.32 (1.12 to 1.55)
Always irregular or no period	51	1.40 (1.04 to 1.87)	86	1.30 (1.04 to 1.63)	236	1.26 (1.09 to 1.46)	106	1.32 (1.08 to 1.62)
P for trend <sup>†</sup>		<0.001		<0.001		<0.001		<0.001
<b>Cycle length</b>								
<b>18-22y</b>								
Oral contraceptive users	648	1.10 (0.95 to 1.28)	1127	1.00 (0.90 to 1.12)	1834	1.03 (0.94 to 1.12)	1222	0.99 (0.89 to 1.11)
≤25d	39	1.08 (0.77 to 1.51)	70	1.05 (0.82 to 1.36)	100	0.92 (0.75 to 1.14)	72	1.05 (0.82 to 1.35)
26-31d	242	1.00 (reference)	450	1.00 (reference)	684	1.00 (reference)	476	1.00 (reference)
32-39d	80	1.25 (0.97 to 1.61)	114	1.03 (0.84 to 1.27)	162	0.98 (0.83 to 1.17)	122	1.00 (0.82 to 1.22)
≥40d or too irregular to estimate	46	1.41 (1.03 to 1.93)	74	1.31 (1.02 to 1.68)	110	1.28 (1.05 to 1.57)	83	1.24 (0.98 to 1.57)
P for trend <sup>†</sup>		0.05		0.14		0.03		0.24
<b>29-46y</b>								
Oral contraceptive users	129	0.99 (0.81 to 1.20)	158	0.91 (0.77 to 1.08)	178	0.92 (0.78 to 1.08)	167	0.96 (0.81 to 1.13)
≤25d	163	1.14 (0.95 to 1.35)	320	0.99 (0.87 to 1.12)	360	1.01 (0.90 to 1.14)	340	1.02 (0.90 to 1.15)
26-31d	579	1.00 (reference)	1069	1.00 (reference)	1182	1.00 (reference)	1143	1.00 (reference)
32-39d	124	1.31 (1.08 to 1.59)	174	1.21 (1.03 to 1.42)	193	1.17 (1.00 to 1.36)	187	1.11 (0.95 to 1.30)
≥40d or too irregular to estimate	60	1.45 (1.10 to 1.89)	114	1.32 (1.09 to 1.61)	143	1.40 (1.18 to 1.68)	138	1.32 (1.10 to 1.58)
P for trend <sup>†</sup>		0.01		0.002		0.001		0.01

\*Multivariable models were adjusted for age (continuous), menopausal status (premenopausal, never, past, or current menopausal hormone use), age at menarche (≤10, 11, 12, 13, or ≥14 years), age at menarche (≤10, 11, 12, 13, or ≥14 years), race (White or other), family history of MI, stroke or diabetes (yes or no), baseline hypertension or high blood cholesterol (yes or no), as well as updated parity (0, 1, or ≥2), alcohol consumption (0, 0.1-4.9, 5.0-9.9, 10.0-14.9, 15.0-29.9, or ≥30 g/day), BMI (<23, 23-24.9, 25-29.9, 30-34.9, or ≥35), physical activity (0, 0.1-0.9, 1.0-3.4, 3.5-5.9, or ≥6 hours/week), smoking status (never smoker, former smoker, current smoker: 1-14, 15-24, or ≥25 cigarettes/day), and Alternative Healthy Eating Index 2010 score (quintiles). <sup>†</sup>P-values for trend were calculated across the categories of menstrual cycle regularity or length, excluding women who were oral contraceptive users.

**Supplemental table 7.** Sensitivity analysis for the association of menstrual cycle regularity and length with the risk of premature mortality, excluding women reporting other conditions and highly irregular or no periods and including women who reported only partial menstrual cycle characteristic information (Nurses' Health Study II, 1993-2017).\*

Menstrual cycle regularity or length	Excluding women reporting hirsutism		Excluding women reporting endometriosis or uterine fibroids		Excluding women reporting "no period" or ">50 days or too irregular to estimate"		Including women reporting partial menstrual cycle data	
	Deat hs	HR (95% CI)	Deat hs	HR (95% CI)	Deat hs	HR (95% CI)	Deat hs	HR (95% CI)
<b>Cycle regularity</b>								
<b>14-17y</b>								
Oral contraceptive users	180	1.17 (0.99 to 1.38)	118	1.19 (0.97 to 1.47)	190	1.19 (1.01 to 1.40)	293	1.14 (1.00 to 1.30)
Very regular	664	1.00 (reference)	441	1.00 (reference)	674	1.00 (reference)	981	1.00 (reference)
Regular	544	0.94 (0.84 to 1.05)	381	0.97 (0.85 to 1.12)	560	0.95 (0.85 to 1.06)	833	0.95 (0.87 to 1.04)
Usually irregular	274	1.08 (0.94 to 1.25)	193	1.11 (0.94 to 1.32)	287	1.10 (0.95 to 1.26)	399	1.04 (0.92 to 1.16)
Always irregular or no period	249	1.19 (1.02 to 1.37)	172	1.17 (0.98 to 1.40)	260	1.20 (1.03 to 1.38)	364	1.10 (0.98 to 1.25)
P for trend <sup>†</sup>		0.02		0.06		0.01		0.11
<b>18-22y</b>								
Oral contraceptive users	1189	1.03 (0.91 to 1.17)	794	1.07 (0.91 to 1.25)	1222	1.05 (0.92 to 1.19)	1762	1.05 (0.94 to 1.17)
Very regular	302	1.00 (reference)	200	1.00 (reference)	304	1.00 (reference)	418	1.00 (reference)
Regular	222	0.94 (0.79 to 1.12)	158	0.99 (0.80 to 1.22)	232	0.97 (0.82 to 1.15)	339	0.99 (0.86 to 1.15)
Usually irregular	111	1.14 (0.92 to 1.42)	85	1.25 (0.97 to 1.61)	119	1.18 (0.95 to 1.46)	158	1.11 (0.92 to 1.33)
Always irregular or no period	87	1.31 (1.03 to 1.67)	68	1.40 (1.06 to 1.85)	94	1.35 (1.07 to 1.70)	129	1.28 (1.05 to 1.56)
P for trend <sup>†</sup>		0.03		0.02		0.008		0.01
<b>29-46y</b>								
Oral contraceptive users	163	0.93 (0.78 to 1.10)	119	0.89 (0.72 to 1.09)	167	0.93 (0.78 to 1.10)	178	0.93 (0.79 to 1.10)
Very regular	1018	1.00 (reference)	715	1.00 (reference)	1038	1.00 (reference)	1081	1.00 (reference)
Regular	479	1.06 (0.95 to 1.18)	303	0.96 (0.84 to 1.10)	492	1.05 (0.95 to 1.17)	508	1.04 (0.93 to 1.15)
Usually irregular	160	1.31 (1.11 to 1.56)	104	1.21 (0.98 to 1.49)	172	1.35 (1.14 to 1.58)	179	1.33 (1.13 to 1.55)
Always irregular or no period	91	1.31 (1.05 to 1.63)	64	1.22 (0.94 to 1.58)	95	1.40 (1.13 to 1.74)	236	1.26 (1.09 to 1.46)
P for trend <sup>†</sup>		<0.001		0.16		<0.001		<0.001
<b>Cycle length</b>								
<b>18-22y</b>								
Oral contraceptive users	1189	1.03 (0.93 to 1.15)	794	1.04 (0.91 to 1.19)	1222	1.03 (0.93 to 1.15)	1834	1.03 (0.94 to 1.12)
≤25d	72	1.06 (0.83 to 1.37)	49	1.07 (0.79 to 1.45)	72	1.03 (0.81 to 1.33)	100	0.92 (0.75 to 1.14)
26-31d	465	1.00 (reference)	316	1.00 (reference)	476	1.00 (reference)	684	1.00 (reference)
32-39d	112	0.98 (0.80 to 1.21)	83	1.03 (0.80 to 1.31)	122	1.03 (0.84 to 1.25)	162	0.98 (0.83 to 1.17)
≥40d or too irregular to estimate	73	1.31 (1.02 to 1.68)	63	1.42 (1.08 to 1.86)	31	1.78 (1.24 to 2.56)	110	1.28 (1.05 to 1.57)
P for trend <sup>†</sup>		0.23		0.14		0.12		0.03
<b>29-46y</b>								
Oral contraceptive users	163	0.91 (0.77 to 1.08)	119	0.89 (0.73 to 1.09)	167	0.91 (0.77 to 1.08)	178	0.92 (0.78 to 1.08)
≤25d	337	1.01 (0.89 to 1.14)	209	0.94 (0.81 to 1.10)	340	0.99 (0.88 to 1.12)	360	1.01 (0.90 to 1.14)
26-31d	1118	1.00 (reference)	768	1.00 (reference)	1143	1.00 (reference)	1182	1.00 (reference)
32-39d	172	1.13 (0.96 to 1.33)	122	1.11 (0.92 to 1.35)	187	1.17 (1.00 to 1.37)	193	1.17 (1.00 to 1.36)
≥40d or too irregular to estimate	121	1.33 (1.10 to 1.61)	87	1.26 (1.00 to 1.58)	22	1.28 (0.84 to 1.95)	143	1.40 (1.18 to 1.68)
P for trend <sup>†</sup>		0.01		0.06		0.08		0.001

\*Multivariable models were adjusted for age (continuous), menopausal status (premenopausal, never, past, or current menopausal hormone use), age at menarche (≤10, 11, 12, 13, or ≥14 years), age at menarche (≤10, 11, 12, 13, or ≥14 years), race (White or other), family history of MI, stroke or diabetes (yes or no), baseline hypertension or high blood cholesterol (yes or no), as well as updated parity (0, 1, or ≥2), alcohol consumption (0, 0.1-4.9, 5.0-9.9, 10.0-14.9, 15.0-29.9, or ≥30 g/day), BMI (<23, 23-24.9, 25-29.9, 30-34.9, or ≥35), physical activity (0, 0.1-0.9, 1.0-3.4, 3.5-5.9, or ≥6 hours/week), smoking status (never smoker, former smoker, current smoker: 1-14, 15-24, or ≥25 cigarettes/day), and Alternative Healthy Eating Index 2010 score (quintiles). <sup>†</sup>P-values for trend were calculated across the categories of menstrual cycle regularity or length, excluding women who were oral contraceptive users.